

17-4 H900 1.345

Work Order ID 80362

February-17-12 12:56:17 PM

80362

Page 1

Item ID: D3689-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: SLEEVE

Start Date: 17/02/2012 Start Qty: 12.00

12

Cust Item ID:

Required Date: 24/02/2012 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals:

Process Plan: M.C.S

Date: 12/02/13

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D3689

Rev B

100

0.00

100

DOOSAN LATHE

Doosan

Memo

0.00

Doosan Lathe

1- Turn as per Folio FA722 Rev: 44 & Dwg D3689 Rev: B
2-CHECK THREAD WITH GO-NO GO GAUGE DT9450 A & B
3-Deburr per dwg D3689

12/3/13

110

0.00

110

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

12/3/13

120

0.00

120

CONVENTIONAL MILLING MACHINE

Mill Conv

Memo

0.00

Conventional Milling Machine

C'sink .188" holes as per dwg D3689

12/3/13

P10

W/O: 80362		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3689-1 PAR #: Fault Category: Machining NCR: Yes No DQA: Date: 12/04/09
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: Date: 12/4/11

NCR: 12-1320		WORK ORDER NON-CONFORMANCE (NCR) 218.03						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/3/16	100	1 part - Drill broke in part while drilling - 06364de RC: equipment loading	W 12/3/23 AAB 12/04/11 Q51042	Scrap & Replace	12/3/16	and 12/03/23	W 12-03-23	12/03/23
							12/04/11 Q51042	

NOTE: Date & initial all entries

Work Order ID 80362

80362

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February-17-12 12:56:17 PM

Item ID: D3689-1 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: SLEEVE
 Start Date: 17/02/2012 Start Qty: 12.00 *12* Cust Item ID:
 Required Date: 24/02/2012 Req'd Qty: 12.00 *12* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00		12/3/13		12	0		
140 *140* QC Quality Control	QC8- Inspect parts - second check Memo 100% CHECK,CHECK ALL DIMENSIONS AND THREAD FIT	0.00 0.00		mk 12/03/23		11	1		PTO
150 *150* Purchasing Purchasing	PURCHASING Memo Issue P/O: 116611 LPI Per ASTM 1417 LEVEL 2 Certificate of conformaty is required	0.00 0.00				CX 12/04/02			(11)

W/O: 80362		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D 3689-1 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/03/23	140	I damaged the thread with the go, no go thread	W 12/03/23	scrap no replace	ok 12/03/23	W 12/03/23	W 12/03/23	W 12/03/23

NOTE: Date & initial all entries

80362

February-17-12 12:56:17 PM

N900040100

Setup Start *NS1*

Stop *NS2*

12

12

Customer:

Reference:

Run Start *NR1*

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

**Insp.
Stamp**

0.00

160

0.00

Ensure certificate of conformity is attached

0.00

170

0.00

Quality Control

0.00

180

0.00

Packaging

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 80362***80362***

Page 4

February-17-12 12:56:17 PM

Item ID: D3689-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: SLEEVE
Start Date: 17/02/2012 Start Qty: 12.00 ***12*** Cust Item ID:
Required Date: 24/02/2012 Req'd Qty: 12.00 ***12*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.00							
Quality Control									

12/4/3

012-04-3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

February-17-12 12:56:22 PM

Page 1

Work Order ID: 80362

80362

Parent Item: D3689-1

D3689-1

Parent Item Name: SLEEVE

Start Date: 17/02/2012

Required Date: 24/02/2012

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP Rev:A New Issue 08-02-11 JLM Verified By:EC
IPP Rev:B Material Change 09-01-07 JLM Verified By:EC
IPP Rev:C Add note on material cutting JLM Verified By:JM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M174PH-H900R1.375		Purchased	No			100	f	19.7507	0.5	6.315789			

M174PH-H900R1 375

17-4 SS H900 ROUND BAR 1.375

**

26 12/3/13

Location

Loc Qty

Loc Code

MAT030

19.7507

111123

19.7507

521

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	80362
Description: Sleeve		Part Number:	D3689-1
Inspection Dwg: D3689 Rev: B		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1.90	+/-0.030	1.90	✓		SI-9	OK
Ø0.768	+/-0.010	0.770	✓			
Ø0.063	+0.005/-0.001	0.063	✓			
R0.06	+/-0.030	R.06	✓		R.G.	
3/4-16UNF-2B	N/A		✓			
0.035 x 45°	+/-0.010 x 0.5°	0.035 x 45°	✓			
1.5	+/-0.030	1.50	✓			
1.35	+/-0.030	1.35	✓			
Ø0.188	+0.005/-0.001	0.188	✓			
90°	0.5°	90°	✓			
Ø0.250	+/-0.010	0.250	✓			
Ø1.075	+0.000/-0.015	1.067	✓			
1.13	+/-0.030	1.13	✓			
4.00	+/-0.030	4.008	✓			

Measured by: EA	Audited by: gnf	Prototype Approval:	N/A
Date: 12/3/13	Date: 12/03/23	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	09.05.11	New Issue	KJ	AA

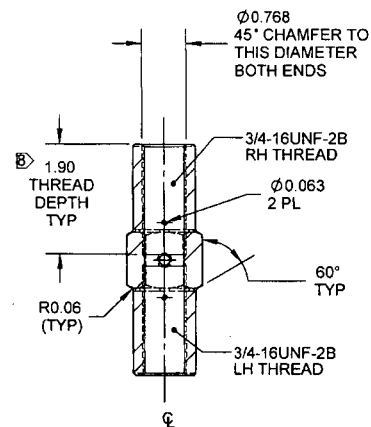
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

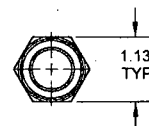
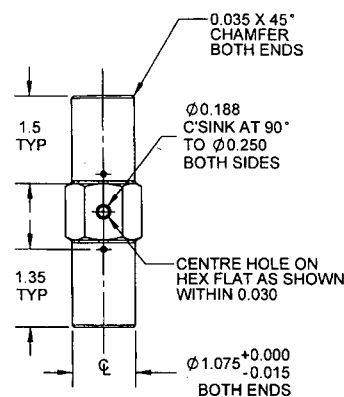
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

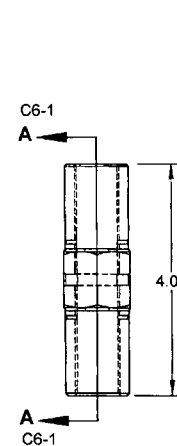
NOTE: Date & initial all entries



SECTION A-A
D3-1



D3689-1 SLEEVE



UNCONTROLLED COPY
RETURN TO
ENGINEERING
SUBJECT TO AGREEMENT
WITHOUT NOTICE
WORK ORDER
NO. 80362 H.C.5
12/02/17

RELEASED
08/12/15

- NOTES:**
- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.67 lb
 - 8) DIMENSION SHOWN IS MINIMUM DEPTH OF FULL THREAD
 - 9) LPI PER ASTM 1417 LEVEL 2

B	CHANGE TO 17-4PH H-900 (ZN A8-1); REFORMATTED TO CURRENT DWG STANDARDS	RF	08.11.24
A	NEW ISSUE	RF	08.05.22
REV.		BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	97	DRAWING NO.	REV. B
MFG. APPR.	37	D3689	SHEET 1 OF 1
APPROVED	11	TITLE	SCALE
DE APPR.	11	SLEEVE	NTS
DATE	08.11.24	<small>COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



LIQUID PENETRANT TEST REPORT

P- 12180

CLIENT DAV AeroSpace DATE 03/30/2012 PAGE 1 OF 1
ATTENTION LINDA LACELLE ACUREN JOB NO. 188-12-00090 TIME AM ☒ PM ☐
ADDRESS 1770 ABERDEEN ST PO/VO NO. -
HAWKES BUILT ON. WORK LOCATION SAME
ACCEPTANCE STD. ASTM A177/AS1-038 REV./DATE 2005
PROJECT F.P.T. ON MACHINED PARTS AND CROSS TUBES
ITEM(S) EXAMINED (1) SLEEVES (5) STUDS (5) CROSS TUBES

JOB DESCRIPTION PROCEDURE NO. LT-002 REV./DATE 2008 TECHNIQUE NO. LT-002 REV./DATE 2008
PART NO. SEE RESULTS MATERIAL ADVANCE ALUMINUM THICKNESS VARIOUS
SCOPE A WET FLUORESCENT LIQUID PENETRANT STAINLESS STEEL
INSPECTION WAS CARRIED OUT 100% EXTERNAL SURFACE.

TEST DETAILS
METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED
FAMILY BRAND MENAFLEX BLACK LIGHT S/N 16459 ☐ OUTPUT > 1000 μ W/cm² ☐ AMBIENT < 2 fc
PENETRANT ZL67 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER 420 MINIMUM DRY TIME >10 MIN. OTHER LAP-00
DEVELOPER SKD52 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N 1098666 CAL DUE DATE 07/28
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY 7012

TEST SURFACE
SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☒ CLEAN BARE METAL
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/ 50°F ☒ 10°C/ 50°F TO 52°C/ 125°F ☐ > 52°C/ 125°F

RESULTS- ☒ METRIC ☐ IMPERIAL
CROSS TUBES

1)	"	W.O.#	80718	✓
2)	"	"	80719	✓
3)	"	"	80782	✓
4)	"	"	78255	✓
5)	"	"	78256	✓

11) SLEEVE W.O.# 80362 ✓
5) STUD W.O.# 78909 ✓
Rebland 1 time
8.14.12

Scope of Services
The agreement by Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.
Standard of Care
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES
CLIENT REPRESENTATIVE Andrew Sheldon PRINT SIGNATURE ASheldon DTR # E-63484
TECHNICIAN (SIGNATURE): Mike Jeffers REPORT REVIEWED BY:
NAME (PRINT): Mike Jeffers NAME INITIALS
TECHNICIAN 2ND TECHNICIAN
CGSB LEVEL II SNT LEVEL II CGSB LEVEL SNT LEVEL
CGSB REG. NO. 66666 CGSB REG. NO.